## ABSTRACT OF THE DISCLOSURE

A method of operating a nuclear power plant includes determining and licensing a maximum power level at which the power plant can be operated subsequent to the beginning of a fuel cycle, and with the power plant being operated at less than its maximum power rating at certain times such as at the beginning of a fuel cycle. The maximum power level is greater than the power level that would be calculated based upon an assumption that the heat flux peaking factor ($F_Q$) and enthalpy rise peaking factor ($F_{\Delta H}$) remain at their maximum level throughout an entire fuel cycle. The maximum power rating takes advantage of factors such as known reductions in $F_Q$ and $F_{\Delta H}$ at certain points in the fuel cycle, the marginal additional capacity of the Balance Of Plant, and the occasional optimization of process parameters such as ultimate heat sink temperature and atmospheric conditions. The power plant may be operated at a substantially continuously variable power level based upon various factors of the power plant, but would not exceed the NRC licensed core thermal power level.